IEOOS, the Spanish Institute of Oceanography integrated Ocean Observing System

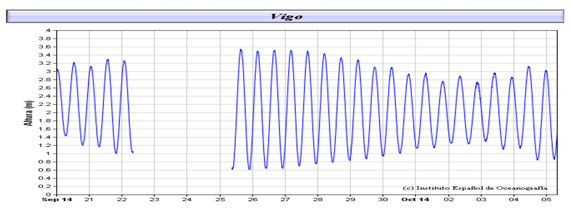
E Tel[1], R Balbín[2], JM. Cabanas[3], MJ García[1], C González-Pola[4], A Lavín[5], JL López-Jurado[2], C Rodríguez[5], M Ruiz-Villareal[6], R Sánchez-Leal[7], M Vargas[8], P Vélez-Belchi[9]

(1) Instituto Esp. Oceanografía. C/Corazón de María, 8. 28002-Madrid. E-mail: elena.tel @ md.ieo.es
(2) Instituto Esp. Oceanografía. C.O. Baleares ; (3) Instituto Esp. Oceanografía. C.O. Vigo; (4) Instituto Esp. Oceanografía. C.O. Gijón; (5) Instituto Esp. Oceanografía. C.O. Santander
(6) Instituto Esp. Oceanografía. C.O. A Coruña; (7) Instituto Esp. Oceanografía. C.O. Cadiz; (8) Instituto Esp. Oceanografía. C.O. Fuengirola ; (9) Instituto Esp. Oceanografía. C.O. Canarias

UN OCÉANO, UN FUTURO
1914-2014 CENTENARIO INSTITUTO ESPAÑOL DE OCEANOGRAFÍA

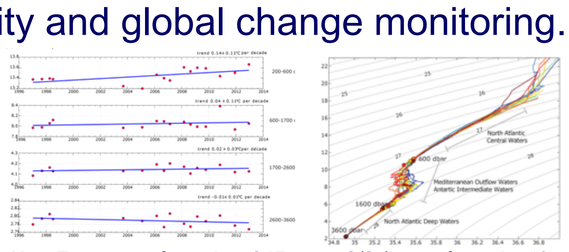
TIDE GAUGE NETWORK

Working since 1943, it is the oldest Spanish tide gauge network. It has 12 stations and is completely linked to international programs as Permanent Service for Mean Sea Level (PSMSL) or Global Sea Level Observing System (GLOSS).



DEEP MONITORING SECTIONS

Deep hydrographic sections are sampled in the Canaries and N-NW Spain since 2003. Sections have been occupied semiannually or at least annually, though the ones in the Cantabrian Sea have been discontinued recently. Its information contributes to the knowledge of the oceanographic climatic variability and global change monitoring.

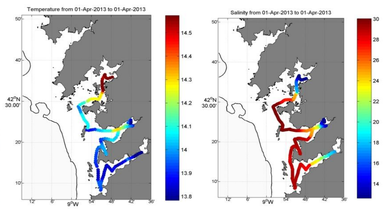


Mean Temperature for stations 6-17 Canary section

Θ/S diagram for station 10 Canary section

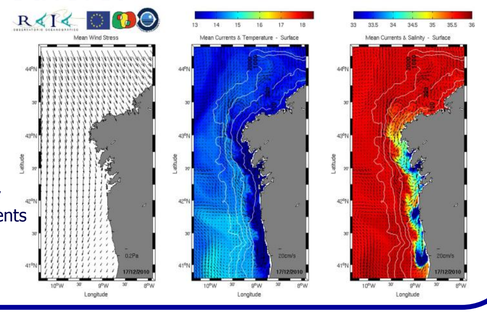
IEO RESEARCH VESSELS UNDERWAY MONITORING

Nowadays the IEO maintains continuously working 5 thermosalinographs, 4 meteorological stations, 4 marine data management systems on board the R/V fleet. Collected data are routinely sent to the IEO datacenter for QA, dissemination and archive.

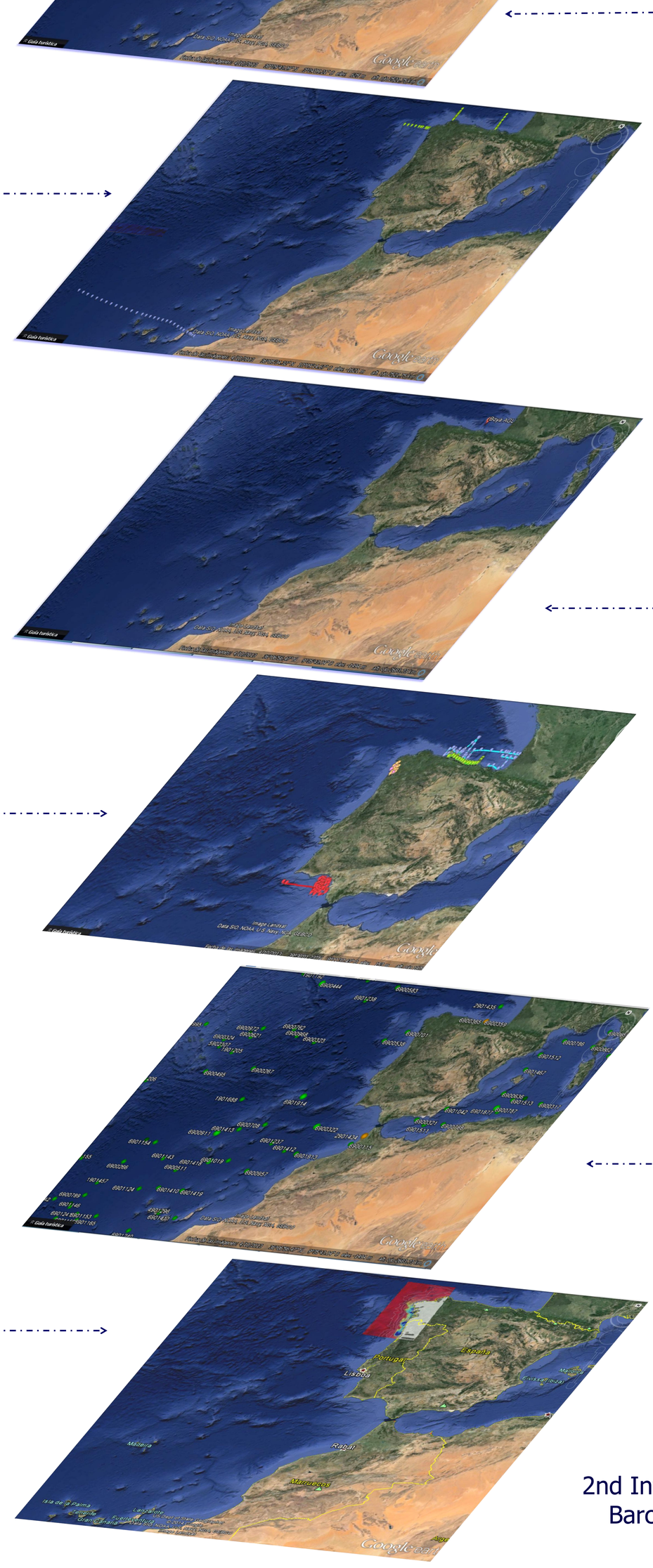


HYDRODINAMIC MODELS

The IEO runs high resolution models in the N-NW iberian peninsula to give response to the oceanographic water conditions, upwelling system variability and harmful algal bloom prediction, among others.

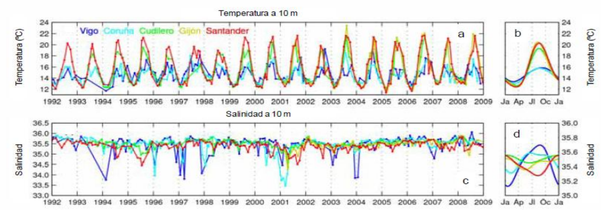


Meteorological forcing (left), temperature (centre), salinity (right) and currents at sea surface



COASTAL MONITORING SECTIONS

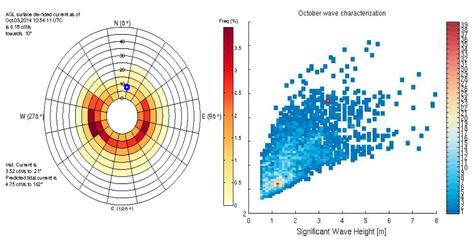
Since 1990, 181 repeated stations build the longest multidisciplinary oceanographic data acquisition network in Spain. They attempt to characterize the ocean variability at different scales, seasonal, inter-seasonal and decadal, including the plankton behavior and the ecosystem responses.



Temperature and salinity variability (10m) in the last 2 decades

OCEAN-METEOROLOGICAL BUOY

Deployed in 2007, 43º50'N 3º47'W, it is located 22 miles North of Cape Mayor, off Santander (southern Bay of Biscay). Water depth at the buoy is 2850m. The obtained information is of great importance for the scientific, meteorological, environmental, fishery, maritime and tourist activities which have a real-time marine information source.

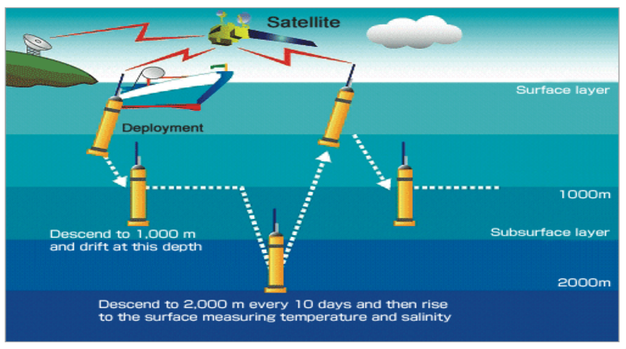


Sea Current against monthly climatology

Wave state against monthly climatology

IEO CONTRIBUTION TO ARGO INTERNATIONAL PROGRAM

The IEO supports the main Spanish contribution to the ARGO international program with 47 deployed profilers since 2003.



2nd International Reseach Conference
Barcelona, 17-21 november 2014

one planet one ocean